FIG. 1

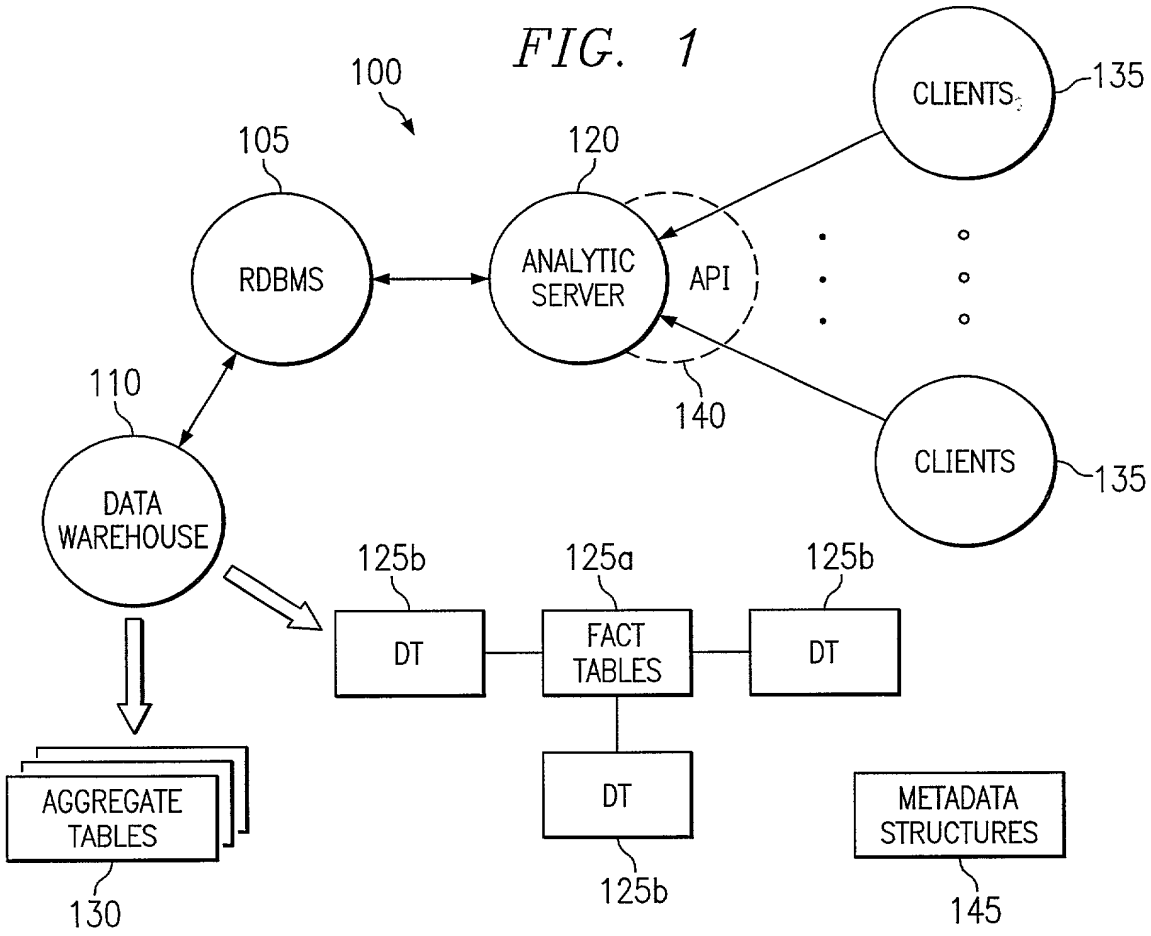


FIG. 5

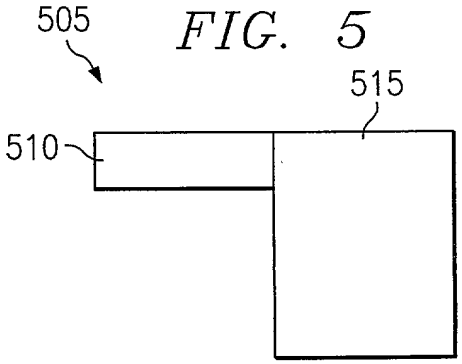


FIG. 4

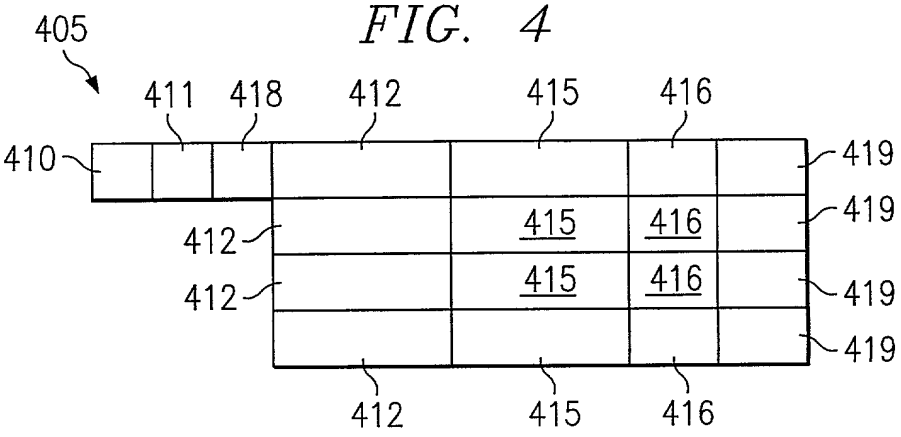


FIG. 2

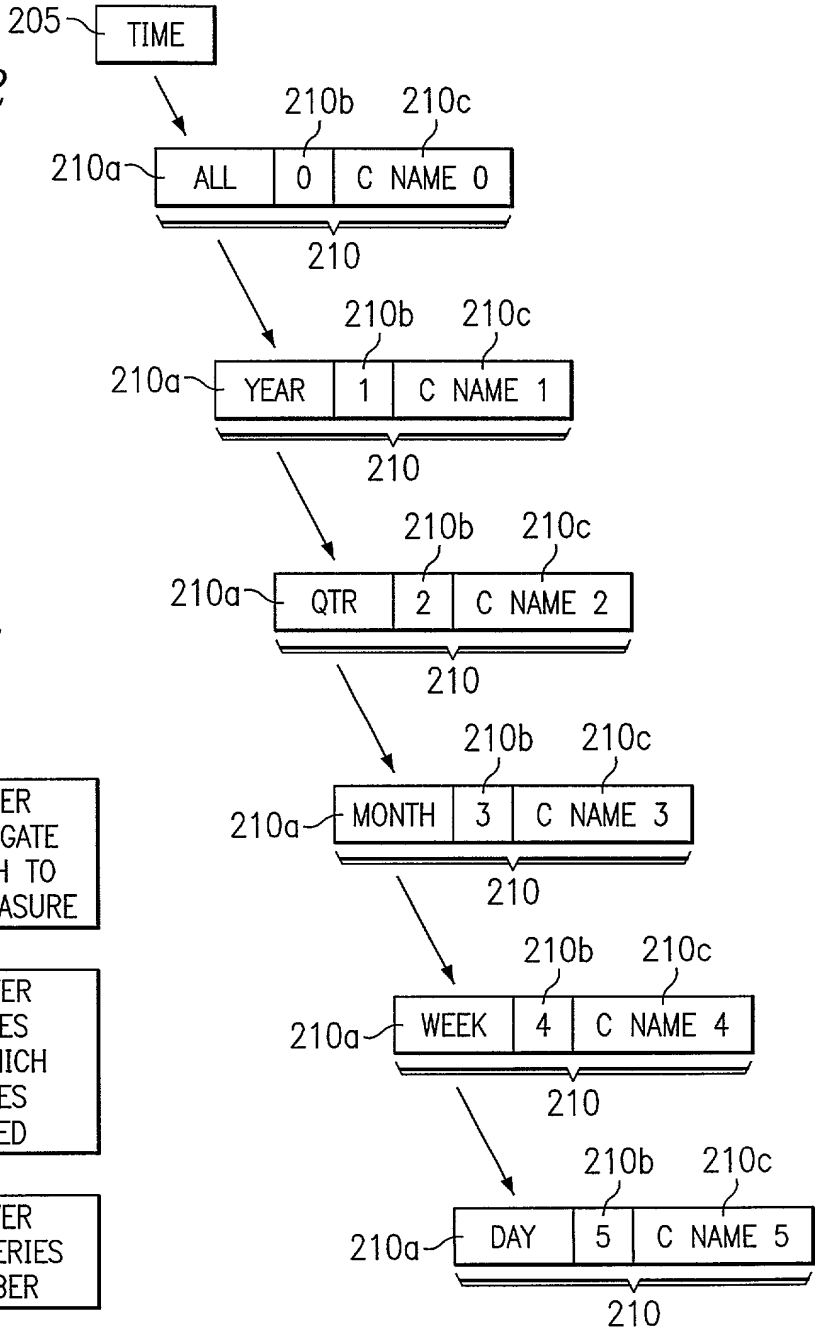

205
TIME
210b
210c
210a
ALL
0
C NAME 0
210
YEAR
1
C NAME 1
QTR
2
C NAME 2
MONTH
3
C NAME 3
WEEK
4
C NAME 4
DAY
5
C NAME 5

FIG. 7

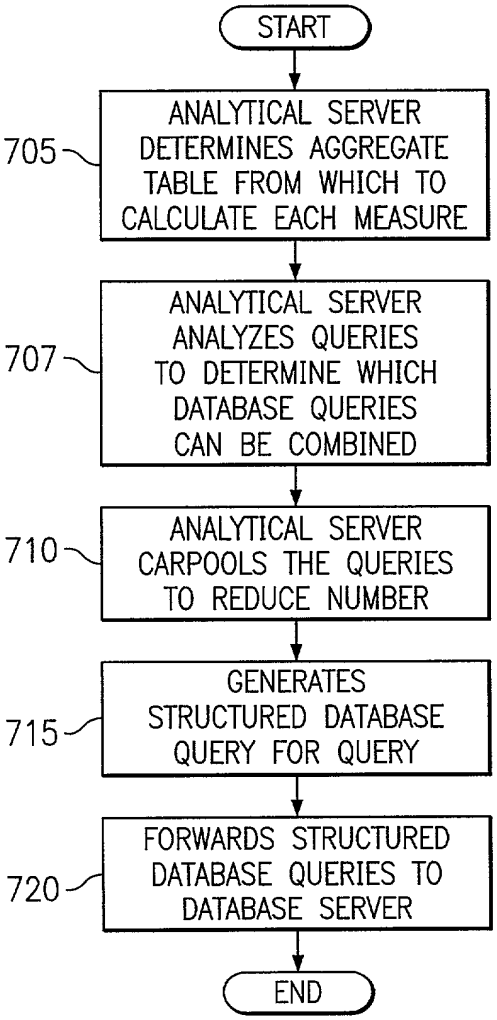

START
705
ANALYTICAL SERVER DETERMINES AGGREGATE TABLE FROM WHICH TO CALCULATE EACH MEASURE
707
ANALYTICAL SERVER ANALYZES QUERIES TO DETERMINE WHICH DATABASE QUERIES CAN BE COMBINED
710
ANALYTICAL SERVER CARPOOLS THE QUERIES TO REDUCE NUMBER
715
GENERATES STRUCTURED DATABASE QUERY FOR QUERY
720
FORWARDS STRUCTURED DATABASE QUERIES TO DATABASE SERVER
END

FIG. 3A

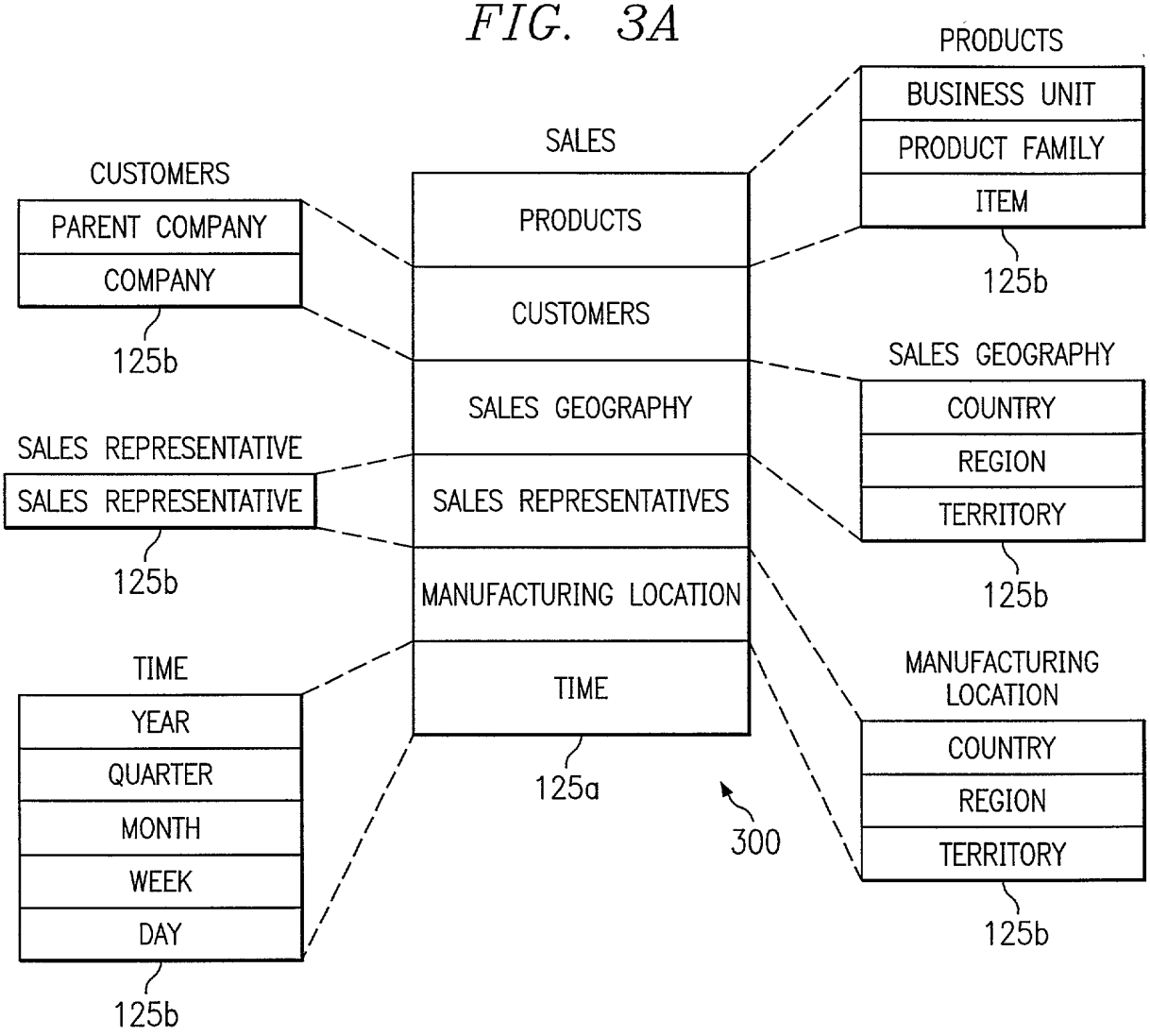

PRODUCTS
BUSINESS UNIT
PRODUCT FAMILY
ITEM
125b
SALES
CUSTOMERS
PARENT COMPANY
COMPANY
125b
PRODUCTS
CUSTOMERS
SALES GEOGRAPHY
SALES REPRESENTATIVES
MANUFACTURING LOCATION
TIME
125a
SALES GEOGRAPHY
COUNTRY
REGION
TERRITORY
125b
SALES REPRESENTATIVE
SALES REPRESENTATIVE
125b
TIME
YEAR
QUARTER
MONTH
WEEK
DAY
125b
300
MANUFACTURING LOCATION
COUNTRY
REGION
TERRITORY
125b

FIG. 3B

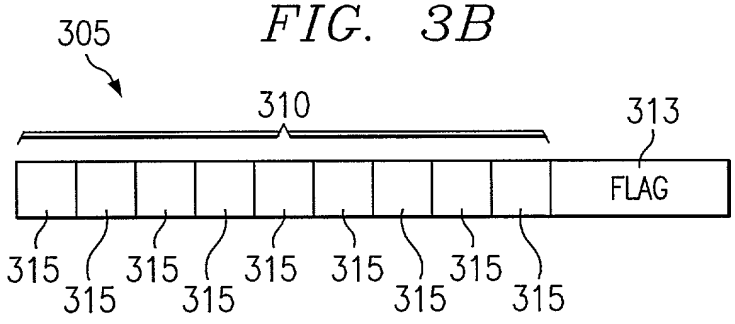

305
310
313
FLAG
315
315
315
315
315
315
315
315
315

FIG. 6

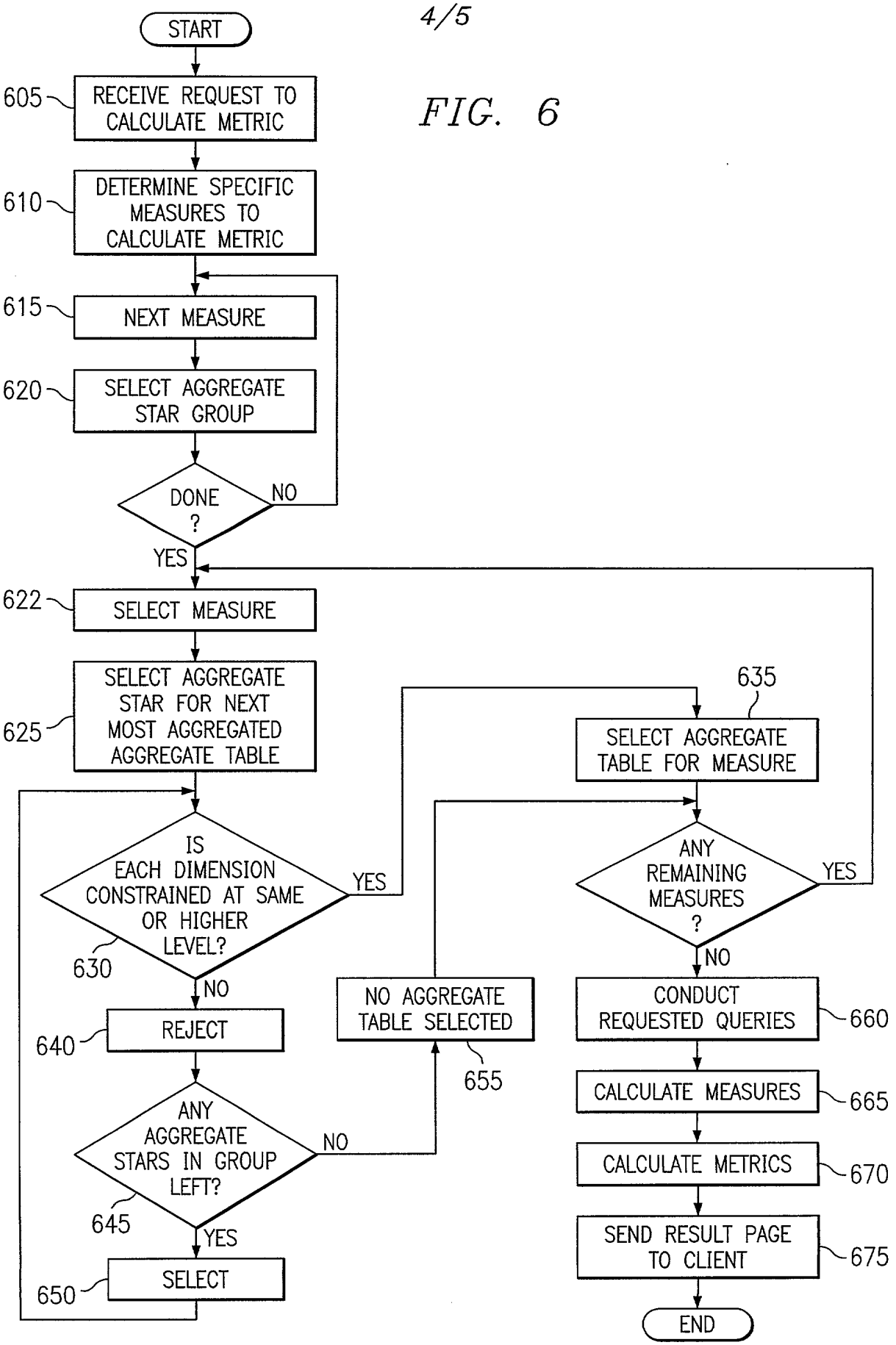

START
605
RECEIVE REQUEST TO CALCULATE METRIC
610
DETERMINE SPECIFIC MEASURES TO CALCULATE METRIC
615
NEXT MEASURE
620
SELECT AGGREGATE STAR GROUP
DONE ?
NO
YES
622
SELECT MEASURE
625
SELECT AGGREGATE STAR FOR NEXT MOST AGGREGATED AGGREGATE TABLE
IS EACH DIMENSION CONSTRAINED AT SAME OR HIGHER LEVEL?
630
YES
NO
640
REJECT
ANY AGGREGATE STARS IN GROUP LEFT?
645
NO
YES
650
SELECT
NO AGGREGATE TABLE SELECTED
655
635
SELECT AGGREGATE TABLE FOR MEASURE
ANY REMAINING MEASURES ?
YES
NO
660
CONDUCT REQUESTED QUERIES
665
CALCULATE MEASURES
670
CALCULATE METRICS
675
SEND RESULT PAGE TO CLIENT
END

FIG. 8

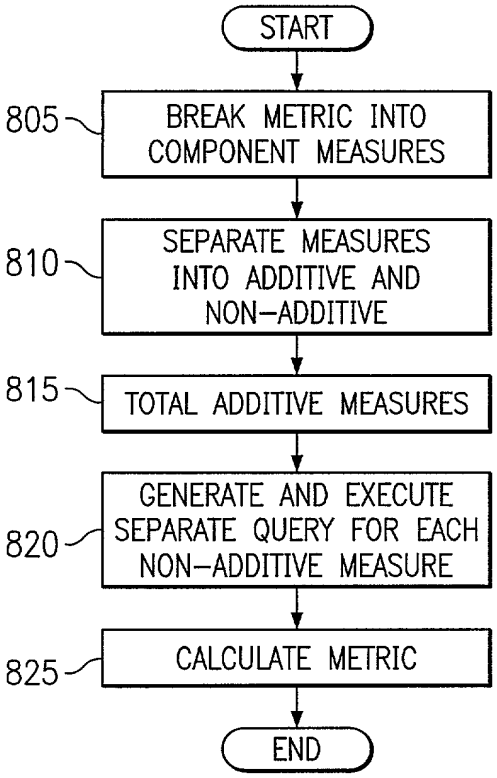
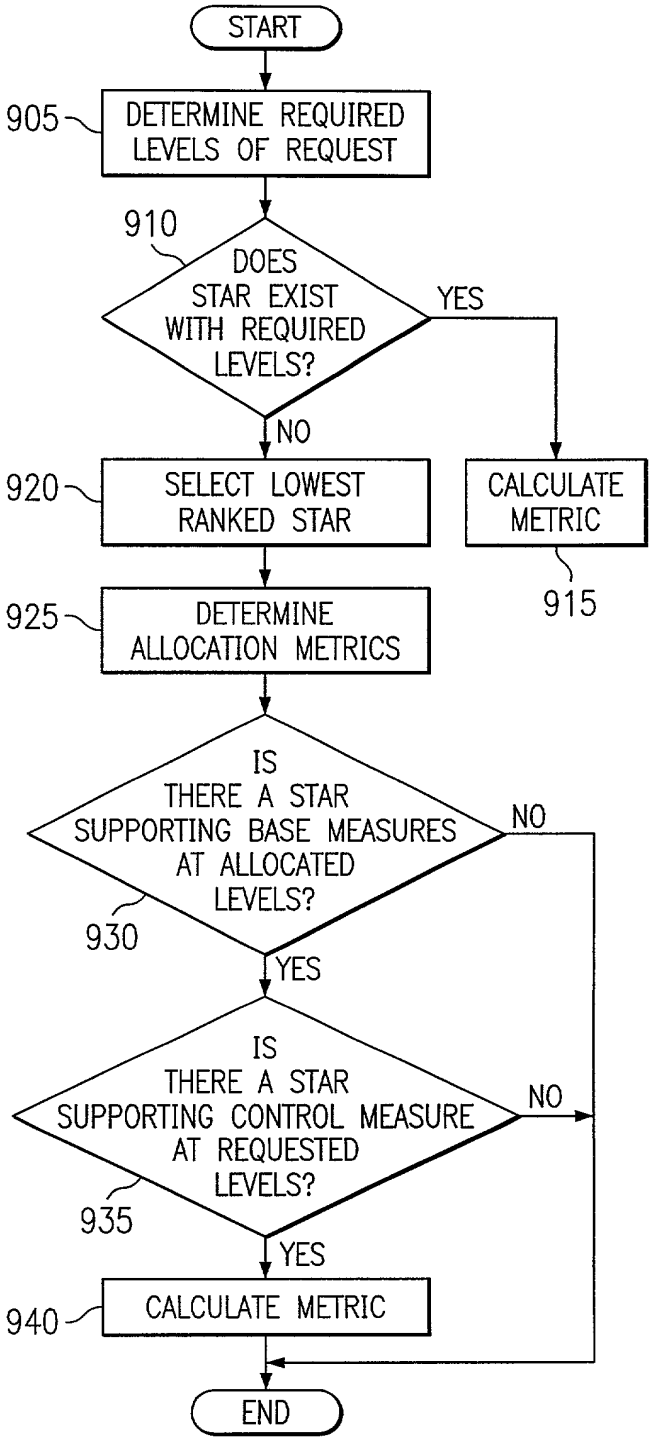

START
805
BREAK METRIC INTO COMPONENT MEASURES
810
SEPARATE MEASURES INTO ADDITIVE AND NON-ADDITIVE
815
TOTAL ADDITIVE MEASURES
820
GENERATE AND EXECUTE SEPARATE QUERY FOR EACH NON-ADDITIVE MEASURE
825
CALCULATE METRIC
END

FIG. 9


START
905
DETERMINE REQUIRED LEVELS OF REQUEST
910
DOES STAR EXIST WITH REQUIRED LEVELS?
YES
NO
920
SELECT LOWEST RANKED STAR
CALCULATE METRIC
915
925
DETERMINE ALLOCATION METRICS
IS THERE A STAR SUPPORTING BASE MEASURES AT ALLOCATED LEVELS?
NO
930
YES
IS THERE A STAR SUPPORTING CONTROL MEASURE AT REQUESTED LEVELS?
NO
935
YES
940
CALCULATE METRIC
END